WHAT IS CLAIMED IS:

1. A laser driver for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, comprising:

an internal clock production circuit configured to produce an internal clock synchronous with the record data signal; and

a strobe circuit configured to strobe the record data signal according to the internal clock.

2. A laser driver according to claim 1, wherein the internal clock production circuit comprises:

a phase comparater configured to produce a phase difference signal representing a phase difference between the record data signal and the internal clock;

a charge pump circuit configured to smooth the phase difference signal;

a filter configured to limit a bandwidth of the phase difference signal; and a voltage controlled oscillator configured to transmit as the internal clock a signal having a frequency determined based on a center frequency designated by a laser driver controller and a control voltage received from the filter.

3. A laser driver for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, comprising:

a mark/space verification circuit configured to verify according to the recording clock whether the record data represented by the record data signal is a mark or space; and

a recording clock inverter configured to invert a phase of a received recording clock;

wherein when said mark/space verification circuit detects a mark or space whose length is equal to or smaller than a predetermined length, said recording clock inverter inverts the phase of the recording clock.

4. A laser driver according to claim 3, wherein when the phase of the recording clock is inverted, a shift value representing the magnitude of a shift by which the timing of an edge of a record pulse is shifted equal to about a half cycle of the recording

clock is added to or subtracted from a control value based on which the timing of the edge of the record pulse is controlled.

5. An optical disk system including the laser driver according to claim 3, further comprising a sample-and-hold circuit configured to sample and hold a waveform of a signal to be recorded on a recording medium or a waveform of a signal to be regenerated from a recording medium; and wherein a control signal, based on which a phase of a recording clock or a strobing clock is changed by substantially 180°, is used to substantially cause a 180° change to the sampling timing at which said sample-and-hold circuit samples a waveform.

6. An optical disk system including the laser driver according to claim 3, further comprising:

a signal processor configured to transmit the record data signal to the laser driver;

a laser diode configured to be driven by the laser driver; and

a driver controller configured to control the laser driver and the signal processor.

7. A laser driver for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, comprising:

a recording clock inverter configured to invert a phase of a received recording clock; and

a phase error detector configured to detect a phase error between a strobing clock used to strobe the record data signal and the record data signal;

wherein when a phase difference between an edge of the record data signal and a strobing edge of the strobing clock becomes equal to or smaller than a predetermined value, said recording clock inverter inverts the recording clock.

8. A laser driver according to claim 7, wherein when the phase of the recording clock is inverted, a shift value representing the magnitude of a shift by which the timing of the edge of a record pulse is shifted equal to about a half of the cycle of the recording clock is added to or subtracted from a control value based on which the timing of the edge of the record pulse is controlled.

9. An optical disk system including the laser driver according to claim 7, further comprising a sample-and-hold circuit configured to sample and hold a waveform of a signal to be recorded on a recording medium or a waveform of a signal to be regenerated from a recording medium; and wherein a control signal, based on which a phase of a recording clock or a strobing clock is changed by substantially 180°, is used to substantially cause a 180° change to the sampling timing at which said sample-and-hold circuit samples a waveform.

10. A laser driver for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, comprising:

a phase-locked loop configured to produce an internal clock synchronous with the recording clock and a group of clocks including a plurality of clocks that are out of phase with the internal clock by predetermined magnitudes;

a write strategy controller configured to control a timing of an edge of a write strategy by utilizing timings of edges of the group of clocks;

a selector configured to select a strobing clock, which is used to strobe a received record data signal, from the group of clocks; and

a mark/space verification circuit configured to verify according to the internal clock whether the record data represented by the record data signal is a mark or space;

wherein when said mark/space verification circuit detects a mark or space whose duration is equal to or smaller than a predetermined duration, a clock substantially 180° out of phase with the clock currently selected as a current strobing clock is adopted as a new strobing clock to replace the current strobing clock.

11. A laser driver according to claim 10, wherein when a clock substantially 180° out of phase with the clock currently selected as a current strobing clock is adopted as a new strobing clock, a shift value representing the magnitude of a shift by which the timing of the edge of a record pulse is shifted equal to about a half of the cycle of the recording clock is added to or subtracted from a control value based on which the timing of the edge of a record pulse is controlled.

12. A laser driver for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, comprising:

a variable delay circuit configured to vary a phase of the record data signal or the recording clock; and

a mark/space verification circuit configured to verify, according to the recording clock, whether the record data represented by the record data signal is a mark or space;

wherein when said mark/space verification circuit detects a mark or space whose length is equal to or smaller than a predetermined length, a delay to the phase of the record data signal or the recording clock to be produced by said variable delay circuit is varied.

13. A laser driver according to claim 12, further comprising a delay controller configured to use a group of clocks to strobe the record data signal; wherein said mark/space verification circuit is configured to use an internal clock synchronous with the recording clock to strobe the record data signal; and wherein said delay controller is configured to vary the magnitude of the delay to be produced by the variable delay circuit based on results of strobing the group of clocks, the group of clocks including a plurality of clocks that are out of phase with the internal clock by predetermined magnitudes.

14. A laser driver for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, comprising:

a phase-locked loop configured to produce an internal clock synchronous with the recording clock and a group of clocks including a plurality of clocks that are out of phase with the internal clock by predetermined magnitudes;

a write strategy controller configured to control a timing of an edge of a write strategy by utilizing the timings of the edges of the group of clocks; and

a selector configured to select a strobing clock, which is used to strobe a received record data signal, from the group of clocks;

wherein said selector is configured to select a strobing clock, which is used to produce a write strategy comprising a recording waveform from clocks, which are used for strobing, according to results of strobing the record data signal using the clocks included in

the group of clocks so as to maximize a phase difference between the edge of the record data signal and the strobing edge of the strobing clock.

15. A laser driver according to claim 14, wherein when a strobing clock is selected from the group of clocks, the phase of a reference clock serving as a reference of a control value based on which the timing of the edge of a record pulse is controlled is agreed with the phase of the strobing clock.

16. An optical disk system including the laser driver according to claim 14, further comprising a sample-and-hold circuit configured to sample and hold a waveform of a signal to be recorded on a recording medium or a waveform of a signal to be regenerated from a recording medium; and wherein when clocks from which a strobing clock is to be selected are changed, the sample-and-hold timing is changed so that the timing of sampling the waveform of a signal to be recorded on a recording medium included in said optical disk system or the waveform of a signal to be regenerated from the recording medium during sample-and-hold will agree with the timing of the edge of the strobing clock.

17. A laser driver for producing the waveform a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, comprising:

a phase-locked loop configured to produce an internal clock synchronous with the recording clock and a group of clocks including a plurality of clocks that are out of phase with the internal clock by predetermined magnitudes;

a write strategy controller configured to control a timing of an edge of a write strategy by utilizing the timings of the edges of the group of clocks; and

a phase error detector configured to detect a phase error between a strobing clock used to strobe a received record data signal and the record data signal;

wherein based on result of detection performed by said phase error detector, a strobing clock is selected from the group of clocks so as to maximize a phase difference between the edge of the record data signal and the strobing edge of the strobing clock.

18. A laser driver according to claim 17, wherein when a strobing clock is selected from the group of clocks, the phase of a reference clock serving as a reference of a control value based on which the timing of the edge of a record pulse is controlled is agreed with the phase of the strobing clock.

19. An optical disk system including the laser driver according to claim 17, further comprising a sample-and-hold circuit configured to sample and hold a waveform of a signal to be recorded on a recording medium or a waveform of a signal to be regenerated from a recording medium; and wherein when clocks from which a strobing clock is to be selected are changed, the sample-and-hold timing is changed so that the timing of sampling the waveform of a signal to be recorded on a recording medium included in said optical disk system or the waveform of a signal to be regenerated from the recording medium during sample-and-hold will agree with the timing of the edge of the strobing clock.

20. A laser driver for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, comprising:

a phase-locked loop configured to produce an internal clock synchronous with the recording clock and a group of clocks including a plurality of clocks that are out of phase with the internal clock by predetermined magnitudes;

a write strategy controller configured to control a timing of an edge of a write strategy by utilizing timings of edges of the group of clocks; and

a variable delay circuit configured to vary a phase of the record data signal or the recording clock;

wherein based on results of strobing the record data signal according to the plurality of clocks included in the group of clocks, a magnitude of a delay to the phase of the record data signal or the recording clock to be produced by said variable delay circuit is controlled so as to maximize a phase difference between an edge of the record data signal and a strobing edge of the strobing clock.

21. A laser driver for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, comprising:

a phase-locked loop configured to produce an internal clock synchronous with the recording clock and a group of clocks including a plurality of clocks that are out of phase with the internal clock by predetermined magnitudes;

a write strategy controller configured to control a timing of an edge of a write strategy by utilizing timings of edges of the group of clocks;

a phase error detector configured to detect a phase error between a strobing clock used to strobe the record data signal and the record data signal; and

a variable delay circuit configured to varying a phase of the record data signal or the recording clock;

wherein based on the results of said phase error detector, the magnitude of a delay to be produced by said variable delay circuit is controlled so as to maximize a phase difference between the edge of the record data signal and the phase of the strobing edge of the strobing signal.

22. A method for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, the method comprising:

producing an internal clock synchronous with the record data signal;

strobing the record data signal according to the internal clock to obtain a driving signal; and

driving a laser diode with the driving signal.

23. A method for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, the method comprising:

verifying according to the recording clock whether the record data represented by the record data signal is a mark or space;

inverting a phase of a recording clock, when a mark or space whose length is equal to or smaller than a predetermined length is detected during the verifying; and

producing, utilizing the inverted phase of the recording clock, a driving signal to be used to drive a laser diode.

24. A method for producing the waveform of a driving signal, which is used to drive a laser diode, according to a record data signal that represents record data to be recorded on a recording medium, and a recording clock, comprising:

producing an internal clock synchronous with the recording clock and a group of clocks including a plurality of clocks that are out of phase with the internal clock by predetermined magnitudes;

controlling a timing of an edge of a write strategy by utilizing timings of edges of the group of clocks;

verifying according to the internal clock whether the record data represented by the record data signal is a mark or space;

selecting a strobing clock, which is used to strobe a received record data signal, from the group of clocks, wherein when a mark or space whose duration is equal to or smaller than a predetermined duration is detected during the verifying, a clock substantially 180° out of phase with the clock currently selected as a current strobing clock is adopted as a new strobing clock to replace the current strobing clock; and

producing, using the new strobing clock, a driving signal to be used to drive a laser diode.